

Behavioural mechanisms in AIDS patients under stress

Kwasa, TO; Townes, B; Hill, H; Carr, J; Mwai, S; Schaffer, R

Date: 1993-01

Abstract:

Clinical observation at the Kenyatta National Hospital showed unusually rapid deterioration of patients testing seropositive to HIV infection and being moved to a side room for nursing. This pilot study tested the hypothesis that deterioration was at least partly, mediated by B-endorphins and other endogenous opioids. The study design was a prospective and comparative study looking at 6 HIV seropositive and 10 control (HIV seronegative) patients matched for sex, age, and clinical status at time of study. The laboratory measures compared were baseline, and daily serum B-endorphin and ACTH. A significant variation is noted between the two groups. The significance of this study is discussed. PIP: From among patients hospitalized at Kenyatta National Hospital, 6 subjects diagnosed as HIV positive by at least one HIV ELISA antibody test and 10 HIV negative control patients were enrolled into a study and matched for age, sex, level of education, and ethnic group. A baseline blood sample was obtained from each patient at 2.00 p.m. for complete blood count biochemical assays for B endorphin and adrenocorticotrophic hormone (ACTH) as well as an HIV ELISA test. HIV positive patients were informed of ELISA test results and transferred to isolation rooms. Blood was drawn on the next 3 consecutive days. Concentration of ACTH was measured by radio-immunoassay. B-endorphin assay was almost the same as for ACTH. Assay sensitivity was 5 pg/ml with a range of 5-500 pg/ml. Multivariate and univariate analyses of variance with repeated measures were used to evaluate the differences in biochemical responses between HIV positive (under stress) patients and HIV negative (with no stress) patients. (ACTH and B endorphin concentrations in plasma were obtained on the day of diagnosis and at different times 1 and 72 hours thereafter. Change scores (pre-post 72 hours) in plasma ACTH and B- endorphin concentrations support the hypothesis that patients diagnoses to have AIDS experience stress mediated biochemical changes. The change score distributions predominantly indicated elevated concentrations of each neurohormone. By contrast, HIV, negative patients exhibited more random patterns of change following diagnosis. The results could be used in situations of stress-induced immuno-incompetency. Identification of significant effect of stress on neuroendocrine response and immune competence in patients diagnoses as HIV positive may suggest methods of prolonging the life of patients who otherwise have no definitive treatment. B endorphin antagonists such as Naltrexone may exert beneficial effects in selected HIV positive patients by modifying the endogenous opioid systems.